IN THE CLAIMS:

41-56. (Cancelled)

57. (New) A method for microfluidic processing samples, the method comprising the steps of:

providing a flexible elongate laminate having a plurality of microstructures arranged therein, the flexible elongate laminate comprising a first lamina having a first surface, a second lamina having a second surface, and a flexible circuit laminate adjacent to the first lamina, (i) wherein at least one of the first or second lamina has a plurality of openings so that whenever the first surface of the first lamina apposes the second surface of the second lamina each opening of the plurality of openings is in fluid communication with one of said plurality of microstructures, (ii) wherein the flexible circuit laminate comprises a plurality of electrodes, each electrode being in contact with an electroflow medium whenever the electroflow medium is suppled to said microstructures, and (iii) wherein each of said microstructures has a detection region;

introducing a sample into each of said microstructures;

conducting an assay on the sample in each of said microstructures to form one or more analytes in the electroflow medium; and

electrophoretically separating the one or more analytes by creating a voltage differential between electrodes so that the one or more analytes are detected in the detection region in each of said microstructures.

58. (New) The method of claim 57 wherein said step of introducing includes electrokinetically injecting said sample into each of said microstructures.

59. (New) The method of claim 57 wherein said step of introducing includes electrokinetically injecting said sample into a reaction chamber of each of said microstructures.

60. (New) The method of claim 59 wherein said assay in each of said microstructures is conducted in said reaction chamber to form said one or more analytes.

61. (New) The method of claim 57 wherein said flexible elongate laminate is moved relative to a detector having a detection field so that said detection region of each of said microstructures is brought within such detection field and a signal produced by said one or more analytes in said detection region is detected or measured.

62. (New) The method according to any of claims 57, 58, 59, 60, or 61 wherein said assay is selected from the group consisting of enzyme assays and receptor binding assays.

63. (New) The method of claim 62 wherein said first lamina, said second lamina, and said flexible circuit laminate are plastic.

64. (New) A microstructure device for detecting one or more analytes produced in a plurality of assays, the microstructure device comprising a flexible elongate laminate having a plurality of microstructures arranged therein, the flexible elongate laminate comprising a first lamina having a first surface, a second lamina having a second surface, and a flexible circuit laminate adjacent to the first lamina, wherein at least one of the first or second lamina has a plurality of openings so that whenever the first surface of the first lamina apposes the second surface of the second lamina each opening of the plurality of openings is in fluid communication with one of said plurality of microstructures, and wherein the flexible circuit laminate comprises a plurality of electrodes, each electrode being in contact with an electroflow medium whenever the electroflow medium is supplied to said microstructures, each of said microstructures comprising:

a sample supply reservoir at an opening;

a sample drain reservoir connected to the sample supply reservoir by one or more microchannel segments;

an elution buffer reservoir;

an analyte waste reservoir; and

a separation channel connecting the elution buffer reservoir and the analyte waste reservoir and intersecting and being in fluid communication with said one or more microchannel segments.

65. (New) The microstructure device of claim 64 wherein said plurality of said microstructures comprises an array of microchannel structures.

66. (New) The microstructure device of claim 65 wherein said microstructures of said array are arranged in a 12 x 8 orthogonal arrangement or in a 24 x 16 orthogonal arrangement.

67. (New) The microstructure device of claim 65 wherein said first lamina, said second lamina, and said flexible circuit laminate are plastic.

68. (New) A microstructure device for detecting one or more analytes produced in a plurality of assays, the microstructure device comprising a flexible elongate laminate having an array of microchannel structures arranged therein, the flexible elongate laminate comprising a first lamina having a first surface and a second lamina having a second surface, wherein at least one of the first or second lamina has a plurality of openings so that whenever the first surface of the first lamina apposes the second surface of the second lamina each opening of the plurality of openings is in fluid communication with one of said plurality of microstructures, each of said microstructures comprising:

a sample supply reservoir at an opening;

a sample drain reservoir connected to the sample supply reservoir by one or more microchannel segments;

an elution buffer reservoir;

an analyte waste reservoir;

a separation channel connecting the elution buffer reservoir and the analyte waste reservoir and intersecting and being in fluid communication with said one or more microchannel segments; and

a plurality of electrodes connected to conductive traces to generate an electric field between the sample supply reservoir and the sample drain reservoir when an electroflow medium is present in the one or more microchannel segments and to generate an electrical field between the elution buffer revervoir and the analyte waste reservoir when an electroflow medium is present in the separation channel.